Klawock Lake Sockeye (*Oncorhynchus nerka*) stock assessment

Abstract: Klawock Lake sockeye salmon (*Oncorhynchus nerka*) are an important subsistence resource for the people of Klawock and Prince of Wales Island. The Klawock Lake Sockeye Salmon Stock Assessment Project was initiated because of concerns about the apparent declines in sockeye salmon returning to Klawock Lake. The project evaluates sockeye salmon production at various life stages and assesses lake productivity. This annual report summarizes work conducted during the first full year of project operations, 2001. A hydroacoustic and trawl survey estimated a sockeye salmon fry density of 0.07 fry per m2 and a total lake population of 718,000 fry. All sockeye salmon fry captured in the mid-water trawl were age-0 except for one age-1 fry. A subsample of 576 emigrating sockeye salmon smolt was composed of 87% age-1 and 13% age-2 fish. Smolt otolith analysis determined that 2.4% emigrating smolt were hatchery produced. A mark-recapture study estimated a sockeye salmon escapement of 14,000 fish into Klawock Lake, but only 7,200 sockeye salmon were counted at the weir. The subsistence harvest was estimated to be 6,400 sockeye salmon. Klawock Lake had a seasonal mean zooplankton density of 125,000 plankters per m^{-2} and a seasonal mean weighted biomass of 217 mg per m^{-2}. The seasonal mean euphotic zone depth was 4.25 m. This year's results provide the foundation for a multiple year study to assess the health of the sockeye salmon stock and to set a range of escapement goals capable of sustaining this population for many generations.

Citations: Lewis B. A. and M. A. Cartwright. 2002. Klawock Lake Sockeye (*Oncorhynchus nerka*) stock assessment. U. S. Fish and Wildlife, Office of Subsistence Management, Fisheries Resource Monitoring Program, Fisheries Resource Monitoring Program, 2001 Annual Report (Study No. 00-043). Alaska Department of Fish and Game, Division of Commercial Fisheries. Regional Information Report No. 1J02-24, Douglas, Alaska.